

B. F. Skinner and the Technological Control of Social Behavior*

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Introduction and Overview

The discipline of political science seems not to have sustained a continuing interest in the developments in behavioral analysis associated with the work of B. F. Skinner. Political scientists and other social scientists have evinced a certain wary animosity, a grudging admiration, and even a creeping fear of the practical successes of behavior theory. It appears, however, that the theoretical concerns of political science have yet to grasp the extent to which its own empirical and normative foundations require insight into the emerging possibilities for the modification and control of human behavior. Analysis of such theoretical issues should proceed at both the levels of general theory (including metapsychological orientations and epistemology) and middle or narrow-range theory in which specific tenets of behavior theory are relevant to the specification of empirical hypotheses.

On the metatheoretical level, many have been content to attack Skinner's epistemology—or at least a reconstructed epistemology adduced from various Skinnerian presentations—on the grounds of what might be referred to here as the “classical humanist” critique. Although this is a gross label for a heterogeneous philosophical tradition, its components generally share in asserting of the autonomy, free will, and purposive nature of human social behavior. Characteristically, such critiques take two general forms: The first is an assertion of the unique, complex capabilities that differentiate human beings from other forms of life, combined with the assertion that systematic (“scientific”) control technology violates some vital aspect of that unique human nature. Although various philosophical and empirical evidence may be used to buttress this argument, it is usually supported by a normative contention about the autonomy and freedom of man. This form of critique is nourished by the rich linguistic and symbolic devices of literature and philosophy, and might be described nonpejoratively as a

normative, humanist, counter-control “ideology.” Not solely restricted to literary and philosophic humanists, this critique has its representatives in psychology, biology, and other behavior and social sciences.

The second form of the humanist attack on behaviorism generally does not begin with an a priori rejection of the possibility of a behavior control science (on the grounds, say, of man's uniqueness or possession of an untouchable core of capriciousness or freedom). Rather it recognizes the actuality of behavior technology and takes seriously the possibility of behavioral manipulation and scientific control. This critique asserts a counter-ideology at the level of theory, generally in the form of an attack on the human acceptability of control and the articulation of concerns designed to arouse people against the encroachments of behavior science. The critique clearly indicates that Skinnerian behaviorism must be actively countered on an intellectual and, presumably, political level.

In an insightful critique of behaviorism, Henry Kariel contrasts behavioral and existential psychology as alternate bases for political theory.¹ Kariel accepts the possibility that a systematically adopted control-oriented theory of politics might become a self-fulfilling prophecy that creates the preconditions for the emergence of its own dominance and practical power in the manipulation of human affairs. Important to Kariel's argument is that the behaviorist “validates” his methodological conventions by acting on the belief of determinacy, thereby expanding the actual amount of control that is systematically (scientifically) exerted. It is from this insight that I intend to proceed in this discussion of Skinnerian behaviorism.

The argument in this paper will differ from Kariel's in that it will attempt to draw together a clear overview of Skinnerian premises and analyze Skinner's methodological presuppositions. The emphasis will be on the empirical import of Skinner's methodology and on the extension of that approach to social behavior. Since Skinner's elevation of behaviorism to a potential tool for the engineering of entire cultures is rooted in a history of both experimental practice and quasi-utopian speculations about social order, consideration of both aspects of his work will be neces-

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¹ Henry A. Kariel, “The Political Relevance of Behavioral and Existential Psychology,” *American Political Science Review*, 61 (June, 1967), 334–342.

sary. The aim throughout will be to assess the appropriateness of his theoretical speculation and empirical research to the development of what might loosely be termed humanistically concerned empirical theory.

I shall treat in some detail the methodological postulates and their implicit epistemology, the normative assumptions that seem either to be implied or are appended in an ancillary fashion to Skinner's social extrapolations, and some of the logical and inferential problems involved in moving from the individualistic experimental paradigm to the realm of speculative social-cultural engineering. The crucial question will be whether behaviorism provides a sufficient framework and method for the construction of empirical political theory.

I will argue primarily that Skinnerian behaviorism commits a fundamental error in elevating a methodological presupposition (reduction of appropriate subject matter to observable behaviors of the organism) to the de facto status of an ontological assertion (denial of the existence of constructs or hypothetical entities that are not strictly manifested in observables). This error is magnified by two major tendencies in contemporary research and in modern society.

The first tendency that intensifies the consequences of this reductionism is the very human need of researchers to investigate that for which their methodology is relevant and which will therefore yield acceptable empirical results to their professional peers. Elaboration within the limited concerns of a behavior theory approach creates sufficient employment within the paradigm, so that metatheoretical questions are pressed successfully only on those who can be lured from the laboratory. While the metatheoretical debate continues at its own level, many researchers are progressively extending and refining the practice of behavior modification and control. As a result, *practical* advances in the laboratory tend to obviate much of the *theoretical* debate.

The second tendency that magnifies the impact of Skinner's methodological reductionism lies in the nature of political practice. If it is granted that an important goal of those exercising political and administrative power is to increase the realm of *administration* (routinization, rationalization, predictability, order) then potential agencies for implementing behavior technology already exist. The possible employment of manipulative technologies for the modification of behavior is a serious problem, despite the scientific optimism of Skinner. As his pure "science" of behavior is converted to a "technology" of behavior control, the magnification of the methodological and epistemological error takes on awesome proportions

that add new force to the Weberian "iron cage" of rational-legal organization of social power. One need not be either a Weberian or a culture critic to recognize that the melding of the technological imperative and the administrative imperative within the agencies of organized social and political control offers both a threat and a challenge to social theory and to the concept of the open society.

Skinner's Methodology

For inveterate pigeon-holders, the following phrases might be used to characterize Skinner's scientific methodology: radical empiricist, atheoretical, experimentalist and hypermaterialist (or environmentalist, if you will). When venturing to extend his program to other realms, he is a "scientian" (a term coined by journalists to describe those scientists who extrapolate egregiously from their limited intellectual spheres), a technocrat, and an explicit humanist with a clear interest in increasing the quality of human life in a palpable sense. His humanism seems to be closely linked with an implicit ideology that assumes the benevolence of the scientific procedure as a rational, humane decision-making process. It is in the service of that implicit ideology that his extensions of behaviorism to social engineering create serious problems.

It is well known, of course, that Skinner adopts in modified form what is known as the S-R (stimulus-response) paradigm, and that he does not find room in this formulation for intervening properties. Skinner sees no need to posit mediating variables or hypothetical constructs that may reside within the individual organism. Some social scientists inaccurately conjure images of Pavlovian conditioning (in the sense of conditioned reflexes). Yet, it is clear that reflexology and various forms of "muscle twitchism" are not fundamental to Skinner's approach. Rather, his primary theoretical contribution is the notion of "operant conditioning," a process whereby the organism's probability of emitting a particular behavior (or class of behaviors) is associated with the consequences of the behavior. If a given response successfully operates on the environment to provide the organism with "reinforcement," it is an operant. Operant conditioning, therefore, is the process whereby a given stimulus is related to the emission of a behavior (response) through its conditioning as an operant.

Clearly, this is substantially different from the Pavlovian discovery of conditioned responses of the salivary glands or other muscles and organs. Not concerned with reducing his data to physio-

² Richard I. Evans, *B. F. Skinner: The Man and His Ideas* (New York: E. P. Dutton, 1968), p. 17.

logical phenomena, Skinner remains at the level of behavior emitted by the organism—when the manipulation of the environmental stimulus is done by the experimenter, one can speak of eliciting a response from the organism or bringing it under control of the stimulus.

Although this review is sketchy and primer-like, it is sufficient to dissociate the Skinnerian method from others based on reflexology, chemical alteration of behavioral or mental states, surgical ablation, electronic stimulation of the brain, or any of a number of technological means for altering the activity of the organism. Compared with such techniques, Skinner's respect for the health and integrity of the organism is rather more praiseworthy (at least from the point of view of the organism, although not necessarily from the scientist's). Skinner's approach is also to be distinguished from other behavior theories; for example, the social learning theories of Julian Rotter³ or Albert Bandura⁴ both of whom emphasize a strong cognitive element in the learning of attitudes and the guidance of behavior.

Thus, Skinner is a radical empiricist. He admits no data that are not directly behavioral. He eschews reduction below the level of behavior, whether in the form of neurological or physiological reductionism or in the postulation of intrapsychic, mentalistic, or cognitive phenomena. What remains is behavior (in the form of responses) and the stimuli of which behavior is a function.

Particularly in his early formulations,⁵ Skinner found no place for cognition. Merle Turner, a philosopher of science who recently attempted to reconstruct behaviorism on the foundation of positivism, states:

Skinner . . . conceptually suppresses the cognitive element in the event complex and treats stimuli as cue-occasions for response. Cognitive implications of the stimuli are accommodated by his insistence that only events tied to a response (i.e., effective stimuli) can be classed as stimuli.⁶

³ See Julian B. Rotter's *Social Learning and Clinical Psychology* (New York: Prentice-Hall, 1954), and his "Beliefs, Social Attitudes and Behavior: A Social Learning Analysis," in *Cognition, Personality and Clinical Psychology*, ed. R. Jessor and S. Feshbach (San Francisco: Jossey-Bass, 1967), pp. 112–140 for an introduction to Rotter's theory.

⁴ Albert Bandura, *Principles of Behavior Modification* (New York: Holt, Rinehart and Winston, 1969). See also Albert Bandura and R. H. Walters, *Social Learning and Personality Development* (New York: Holt, Rinehart and Winston, 1963).

⁵ See, for example, *The Behavior of Organisms: An Experimental Analysis* (New York: Appleton-Century-Crofts, 1938).

⁶ Merle B. Turner, *Philosophy and the Science of Behavior* (New York: Appleton-Century-Crofts, 1967, p. 119.

As a result of this position, Turner argues, "intervening variables as treated . . . by Skinner . . . are logical constructions."⁷ But what are logical constructions? And how does their theoretical function differ from hypothetical constructs and intervening variables?

In the first place, logical constructions are to be distinguished from hypothetical constructs to avoid the inference that a logical construction "misleads" the psychologist into thinking there is anything existential to be studied other than behavior in the functional stimulus-response formulation. For example, Skinner rejects the notion of drive (from Freud, but also utilized by less "radical" behaviorists), as "primitive animism." Rather, when Skinner defines drive in terms of a deprivation schedule or in terms of behavioral variability, he is treating motivation as a logical construction.⁸ Thus, a logical construction for Skinner is simply a way of summarizing variability of the behavioral responses of the organism, or of describing the past history of deprivation (or satiation, etc.). Rather than explaining a rat's eating food pellets in terms of "hunger" (a drive, or hypothetical construct with mentalistic connotations), the functional explanation simply points to the history of the organism and shows how certain stimuli (in this case, deprivation) increase the probability of a certain type of response (eating). That is sufficient explanation. It is this methodological rejection of mediating variables that is the locus of much of the humanist hostility to Skinner's scientific formulation. Skinner's treatment of cognition—what many would claim to be the primary component of distinctively human consciousness—shows the outcome of this reductionism:

Induction (or generalization) is not an activity of the organism; it is simply a term which describes the fact that the control acquired by a stimulus is shared by other stimuli with common properties.⁹

Or, again, with respect to the process of "abstraction,"

Behavior may be brought under the control of a single property or a special combination of properties of a stimulus while being freed from the control of all other properties. The characteristic result is known as abstraction. . . . Abstraction . . . is not a form of action on the part of the organism. It is simply a narrowing of the control exercised by the properties of stimuli.¹⁰

It is obvious why humanist social scientists, cognitive psychologists, and a number of others find little room in Skinner's formulation for what they believe is distinctively human—autonomous,

⁷ *Ibid.*, p. 207.

⁸ *Ibid.*, p. 303.

⁹ B. F. Skinner, *Science and Human Behavior* (New York: Macmillan, 1953), p. 134.

¹⁰ *Ibid.*, pp. 134–135.

purposive, goal-directed, cognizing behavior. The very language Skinner employs leaves little room for compromise or amelioration of the rigid methodological posture (e.g., as when speaking of abstraction as being a "narrowing of the control properties of the stimuli"—not the active abstracting behavior of the organism, mind you, but the control properties of the stimuli!). Some behavior theorists have found room in their S-R formulations for the S-O-R modification which inserts the "organism" between the stimulus and response and postulates hypothetical constructs or intervening variables that act as mediators. As Osgood¹¹ and, later, Kalleberg¹² note, this process allows room for conceptualizing mediating states or entities within the organism that influence behavioral outcomes, thereby reinstating part of what is lost in Skinner's reductionism. Skinner's consistent use of logical constructions, however, explicitly denies such intervening, mediating conceptual entities. The epistemological implications of this form of "radical empiricism" need further elaboration.

We must ask, in short, does Skinner's reductionism approach reflect *only* a methodological position and is it therefore used as a convenient strategy for narrowing investigatory purview and delimiting research strategy? Or, does Skinner really mean to deny ontological status to hypothetical constructs like "drive," "emotion," and other mentalistic constructs employed by social psychologists and political scientists alike? A partial answer comes from Skinner's discussion of emotion in which he states rather simply that

we define an emotion—insofar as we wish to do so—as a particular state of strength or weakness in one or more responses induced by any one of a class of operations.¹³

For example, the sum of an individual's reactions to criticism of his own work reflects the "total emotion" involved in the episode under analysis. Skinner consistently reduces any alternative concepts to those of his functional behavioral analysis, implying that nothing else of interest is involved in the situation. Superficially, this appears to be more than a methodological position; it appears to be an ontological assertion, a contention about the nature of reality.

The ontological pretensions of this position are

¹¹ Charles E. Osgood, "Behavior Theory and the Social Sciences," *Behavioral Science*, 1 (July, 1956), 167–185. Reprinted in *Approaches to the Study of Politics*, ed. Roland Young (Evanston: Northwestern University Press, 1958), pp. 217–244.

¹² Arthur L. Kalleberg, "Concept Formation in Normative and Empirical Studies: Toward Reconciliation in Political Theory," *American Political Science Review*, 63 (March, 1969), 26–39.

¹³ Skinner, *Science and Human Behavior*, p. 166.

stated succinctly by Turner who argues that, for Skinner, "drives are not internal stimuli or physiological states or other substantive states not definable in terms of simple operations."¹⁴ But, can such constructs be nothing other than the operations which indicate them?

For the psychologist, the issues of constructual reduction obtrude when he considers the empirical status of his mediating variables . . . intervening variables are very like logical constructions, reductive and without existential status . . . , whereas, hypothetical constructs are not strictly reducible, carry surplus meaning with them, and may in fact pretend to potential existential status. The issue . . . devolves on whether intervening variables can do the job theory construction requires.¹⁵

Turner suggests further that such variables are tidy and reassuring to radical behaviorists, but may in fact be deficient for theory and for depicting reality. Coming from a theorist so sympathetic to behaviorism and positivism, this suggestion of a deficiency highlights the fact that Skinner's position is problematic even among behavior theorists. A brief return to Skinner's treatment of emotion will indicate further that his operational reductionism causes difficulties within his own framework as well. In *Science and Human Behavior*, Skinner says that

as long as we conceive of the problem of emotion as one of inner states, we are not likely to advance a practical technology. It does not help in the solution of a practical problem to be told that some feature of a man's behavior is due to frustration or anxiety; we also need to be told how the frustration or anxiety has been induced and how it may be altered. In the end, we find ourselves dealing with two events—the emotional behavior and the manipulable conditions—of which that behavior is a function—which comprise the proper subject matter of the study of emotion.¹⁶

And later, he asserts that in order to remedy such behavior, "we must attack the external circumstances which are responsible for it."¹⁷ Although he stops short of ascribing real or ontological status to emotions, it is clear that they stand for something more than just operations—at least in his discussion of them and their ascribed effects. In order to observe and manipulate such emotions scientifically, however, the behaviorist paradigm of Skinner requires that surplus meaning be excised, that existential pretensions be discarded, and that the external conditions of which the behaviors are a function be manipulated in order to alter the "emotional behavior." He seems willing to leave others to discuss whether simply dealing

¹⁴ *Ibid.*, p. 317.

¹⁵ Turner, p. 303.

¹⁶ Skinner, *Science and Human Behavior*, p. 167.

¹⁷ *Ibid.*, p. 168.

with the behavior solves the problems, because for him the behavior *is* the problem. He has defined the problem in a way that he, in principle, can solve. Any other definition places its resolution beyond his methodology. Therefore, only radical reductionism can bring within his grasp the human individual and (as will be argued later) the social world.

In a subtle sense, then, Skinner slips between methodological reductionism (a research strategy and investigatory paradigm) and ontological reductionism (an assertion about the nature of reality). He intends and defends the former while committing the latter by default.¹⁸ When he adheres to logical constructions and operational definitions and argues that they have no deeper existential status, he seems to mean that they simply summarize a set of observed behaviors and conditions. On the ontological level, his assertion should be taken to mean that those logical constructions and definitions have no *necessary* existential status within his system; that is, for his experimental purposes there is no reason to postulate such entities since they are neither directly observable or directly manipulable. It should be kept in mind that he does not explicitly *deny* the ontological existence of such possible hypothetical entities or internal characteristics of the organism, but that his methodological postulate is that they have no place *in the program he delimits*. One must also remember, however that, the program originally developed by Skinner had a research orientation that focused on the laboratory manipulation of the behavior of various species of small animals. Skinner's later attempts to extend his principles of operant conditioning to social engineering do not reinstate those con-

cepts or "variables" that are dispensable in his laboratory but seem crucial in *social theory*. This process can be briefly summarized as the reification of a methodological postulate to the status of a central premise of a social theory.

Skinner's extension of his behavioral program to social and political affairs involves, then, an egregious mixing of the two types of reductionism, methodological and ontological, and insufficient attention to terms not included in his experimental program. This makes his extrapolation to social behavior untenable. The critique here suggests that surplus meaning is denied on the ontological level in Skinner's social extrapolations, even though it is denied only at the methodological level in his experimental investigations.¹⁹ The result is a distortion of the subject matter and an overemphasis on that which can be studied with Skinner's methods over that which cannot.²⁰

If a concept (such as "mind," "emotion," "drive," "cognition") is "irrelevant" in Skinner's program, it is not because he *explicitly* commits the reductive step at the level of ontology. Rather, he excises these concepts at the level of methodology, allowing them to dessicate naturally, because they play no role in "the kind of analysis I am trying to develop."²¹ In the end the ontological

¹⁸ This process, endemic in behaviorism, has been described by Wartofsky as an outcome of the original revolt in psychology against the self-imposed limits of introspectionism and subjective analysis:

The attempt to go beyond this introspective-subjective limit and to introduce objective observation into psychological inquiry, in the way of establishing public or intersubjective data, turns from introspection to perceptually available outward behavior as the subject matter of psychology. The sharpest expression of this turn from "mind" to "behavior" is the assertion of an ontological reduction, on the basis of the methodological shift. If consciousness is to be studied in terms of the "overt behavior of the intact organisms," then the postulation of an invisible and unobservable "mind" or of some internal "mental" events is no longer necessary. At best, *mind* comes to serve only as the name given to that complex of "segments" or "elements" of behavior which we regard as the ultimate entities in terms of which consciousness is to be described; and even *consciousness* is reducible, in these terms to such manifest behavior. Marx Wartofsky, *Conceptual Foundations of Scientific Thought* (New York: Macmillan, 1968), pp. 372-373.

¹⁹ Skinner's reductionism has been widely criticized on methodological and philosophical grounds. Much of the debate has focused on whether mentalistic constructs can be expunged from a theory that seeks to account adequately for empirical reality. Some diverse sources of such criticism are Carl G. Hempel, *Philosophy of Natural Science* (Englewood-Cliffs, N.J.: Prentice-Hall, 1966), pp. 106-110; Michael Scriven, *A Study of Radical Behaviorism* (Minneapolis: University of Minnesota Press, 1956); Brand Blanshard and B. F. Skinner, "The Problem of Consciousness—A Debate," *Philosophy and Phenomenological Research*, 27 (March, 1967), 317-337; and Arthur Koestler, *The Ghost in the Machine* (Chicago: Henry Regnery, 1967), pp. 3-18. For some other sources of the antibehaviorist critique, the reader might consult the following: Arthur Koestler and J. R. Smythies, eds., *Beyond Reductionism* (Boston: Beacon, 1969); Ludwig von Bertalanffy, *Robots, Men and Minds* (New York: Braziller, 1967); A. R. Louch, *Explanation and Human Action* (Berkeley: University of California Press, 1966); and Floyd W. Matson, *The Broken Image* (Garden City, N.Y.: Doubleday, 1966). Skinner's debate with Blanshard (cited above) indicates his belief that such problems are great enough to warrant serious discussion, as do portions of the following of his writings: "Behaviorism at Fifty," in *Behaviorism and Phenomenology*, ed. T. W. Wann (Chicago: University of Chicago Press, 1964), pp. 79-97, and *Beyond Freedom and Dignity* (New York: Knopf, 1971).

²⁰ Such reductionism involves the tendency for the methodological presupposition to become a subtle methodological imperative. For a less temperate statement of this tendency in behaviorism, see Koestler, *The Ghost in the Machine*, p. 17.

²¹ Evans, p. 23.

shift takes place by default, but it nevertheless occurs.

The restrictive implications of this process indulged in by Skinner and, allegedly, by other behaviorists have been criticized from a number of different viewpoints. Abraham Maslow, for example, criticizes behaviorism in general for being a partial (though not necessarily incorrect) position that is *only one* of several valid approaches. Since behaviorism can only provide a partial representation of reality, the willingness of its proponents to reify its methodology into a world-view has ironic and reprehensible consequences. In a wry comment on behaviorism's methodological imperative he says:

... I remember seeing an elaborate and complicated automatic washing machine for automobiles that did a beautiful job of washing them. But it could do only that, and everything else that got into its clutches was treated as if it were an automobile to be washed. I suppose it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail.²²

The danger, from the point of view of humanist social science, literature, and philosophy, is that the subject matter will be violated by behaviorism. Some argue that even the rat, the cat, the monkey, and other subjects of behavioral science are wrenched from nature and that behaviorism studies only those aspects of the organism subject to experimental manipulation. Further, some assert that only artificial behaviors emerge in the artificial experimental environment.²³ Others, like von Bertalanffy²⁴ are offended by the extension of methods used on "lower" animals to man, on the grounds that this "rattomorphic fallacy" ascribes to man only those characteristics that can be manipulated in the rat (and leaves out those characteristics that, even in the rat, cannot be manipulated). It is at the level of this latter critique that our own discussion can best proceed; namely, whether behaviorism as described by Skinner reduces man to those characteristics that have been controlled in lower organisms and, if so, whether extrapolations to the sociopolitical level are not doomed from the beginning as social theory. The succeeding portion of this discussion will approach this question first through a consideration of Skinner's own belief about the extensibility of his methods to individual human behavior, then through his extrapolations to group processes. In a logical, although not necessarily chronological, sense this will involve our attending first to verbal,

then to group symbolic processes, and finally to the engineering of cultural behavior.

Verbal and Symbolic Processes

Skinner has repeatedly affirmed his methodological position that in principle the processes governing the behavior of men and lower animals are the same. Even though human behavior can be so complex that isolating and controlling the relevant environmental stimuli may be difficult in practice, the basic research paradigm is the same: society is potentially the research laboratory writ large. The validity of this methodological stance is of the greatest importance to Skinner's extrapolations, and he seems not to doubt its correctness:

To extend behaviorism as a philosophy of science to the study of people in groups, of people speaking and listening, teaching learning—this is not "psychologizing" in the traditional sense. It is simply the application of a tested formulation to important parts of the field of human behavior.²⁵

While some might blanch at this extension of an experimental program based on nonverbalizing animals to the analysis of verbal behavior, Skinner sees no contradiction: verbal behavior is behavior just the same, and it will yield to his program of experimentation. He states that "no assumption is made of any uniquely verbal characteristic, and the principles and method employed are adapted to the study of human behavior as a whole."²⁶

Drawing upon the foregoing analysis of methodological and ontological reductionism, one can suggest that Skinner has taken what might be an allowable (but debatable) position for guiding research and allowed it to stand for a definition of the nature of the subject matter. Although a unique formulation for *human* behavior might demand a much richer program of research and conceptualization, he pares off that which does not fit his approach. Since it is not "relevant" to his program, it may not exist at all. Contrary positions seem unnecessary to him, if not utterly benighted. As Maslow has argued with respect to such modes of analysis,

the artificial habit of abstraction, or working with reductive elements, has worked so well and become so ingrained a habit that the abstractors and reducers are apt to be amazed at anyone who denies the empirical or phenomenal validity of these habits. By smooth stages they convince themselves that this is the way in which the world is actually constructed, and they find it easy to forget that even though it is useful it is still artificial, conventionalized, hypothetical—in a word, that it is a man-made system that is imposed upon an interconnected world in flux. . . . It is dangerous to see

²² Abraham Maslow, *The Psychology of Science* (New York: Harper and Row, 1966), pp. 15–16.

²³ On these points, see von Bertalanffy, p. 13, and Louch, pp. 35–36.

²⁴ von Bertalanffy, pp. 15–16.

²⁵ Skinner, "Behaviorism at Fifty," p. 96.

²⁶ B. F. Skinner, *Verbal Behavior* (New York: Appleton-Century-Crofts, 1957), p. 11.

in the world what we have put into it rather than what is actually there. . . .²⁷

To the extent that Skinner commits that error, he handicaps the theoretical extensions of his approach by prematurely closing the potential universe of scientific possibilities. If this is indeed the error that it appears to be, Skinner has provided himself with a handicap that is *internal* to his system and not simply one leveled against him by those who operate outside the framework of behaviorism. The fact that Skinner's own program has no need for a richer view of human functioning is not sufficient grounds for closing an empirical theory of society against nonbehaviorist concepts. It is not possible to delineate precisely what might prove to be necessary in such a theoretical system, but the very likelihood that Skinner's behaviorism might not be sufficient is in itself a damaging argument because his methodological postulates deliberately excise cognitive and mentalistic processes *in advance*.

To complicate matters further, Skinner nowhere analyzes the meta-position of his program with respect to the whole realm of human study. He does not specify a range of possible topics for study or indicate which might be well met with the behavior control paradigm and which might not. Rather, he assumes that *any* problem of importance can be so dispatched, given sufficient scientific resources. He views reality through his methodological imperative and treats the social world as if it were ready for the molding.

The corollary of this assumption is the belief that no important aspect of human behavior is eliminated by such a methodological fiat. Further, that engineering principles are cumulative and will lead to specification of the complex order of verbal and other human behavior as the science itself progresses. Implicit is Skinner's faith that further research (which has admittedly not yet been done) will discover that human and social processes are similar to those of his laboratory animals and can be described in mechanistic and additive external processes (rather than with hierarchical, holistic, or internal processes). By default, Skinner has legislated what the further analysis of behavior should find, without adhering to his own experimental caveat to follow the data wherever they lead, rather than imposing on them one's own sense of order. This rather unscientific adherence by Skinner to only one particular mode of knowing seems highly prejudicial. Within science itself there are multiple modes of knowing, and multiple sources of theoretical guidance. To choose arbitrarily and prematurely one of many competing scientific orientations seems, at best, unwise.

To emphasize the restricted nature of the

peculiar scientific framework that Skinner accepts far in advance of any confirmatory data, let us briefly consider a criticism by another behavior theorist (noticing that telling criticism can come from sources far closer to Skinner than ideological humanists). Albert Bandura, whose name is associated with a reinforcement-oriented social learning theory, has argued that:

it has been customary in psychological theorizing to construct entire explanatory schemes around a single form of behavior control, to the relative neglect of other obviously influential variables and processes. Thus, for example, some psychologists have tended to concentrate upon stimulus control effected principally through classical-conditioning operations; Skinnerians have primarily focused upon external reinforcement control of behavior; and researchers favoring cognitive interpretations have been more preoccupied with mediational processes. These *resolute allegiances to partial processes* are typically accompanied by some disdain for variables patronized by out-group theorists. (Emphasis added.)

Having thus characterized Skinner as a proponent of *only one* of several learning or behavior-oriented approaches, he goes on to argue that

A comprehensive theory of human behavior must encompass all three sources of behavioral regulation, i.e., *stimulus control, internal symbolic control, and outcome control*. (Emphasis added.)²⁸

While many might disagree with the way in which Bandura formulates the generic categories of analysis, it is clear that Bandura sees a need for symbolic behavior, internal cognitive processing, selection of responses by the individual, and perhaps a variety of other processes that Skinner disregards. The Skinner program is particularly deficient in the area of cognitive processing and symbolic mediation, even though cognition and symbolization seem important for the analysis of human social behavior. It is this a priori allegiance to a "partial process" (the operant conditioning model) that causes Skinner problems in extrapolation to the social level.

One need not deny the relevance of Skinnerian contributions to the understanding of behavior, one need not deny his scientific or methodological achievements, to find his restrictive elevation of that methodology unacceptable. It is precisely that restrictive tendency that one of his more intemperate critics called the "infantilism of specialists who see society merely as an extension of their specialty."²⁹ Such a condemnation may be too harsh, but it indicates with some drama the difficulties encountered in the reification of a particular, partial, scientific methodology.³⁰

²⁸ Bandura, *Principles of Behavior Modification*, p. 45.

²⁹ Northrop Frye, "Varieties of Literary Utopias," *Daedalus* (Spring, 1965), p. 330.

³⁰ Anyone who detects in Skinner's treatment of

²⁷ Maslow, p. 4.

Group Processes

If there is a deficiency in Skinner's program for handling verbal behavior where the individual organism is still the unit of analysis (and group or community processing are conceived as part of the "controlling environment"), it is even more problematic how Skinner could incorporate group characteristics when these become the central focus of concern. An adequate treatment of group behavior would seem to be the next step upward in his extrapolation from the controlled laboratory to cultural engineering. This section will argue that group processes are unspecified, but nevertheless are expected by Skinner to be subsumed under the behaviorist methodology to which he is already committed, thus leading Skinner to commit yet another misstep in the reification of that methodological premise into a *de facto* ontology of social reality. Consider the following:

Social behavior may be defined as the behavior of two or more people with respect to one another or in concert with respect to a common environment . . .

We are interested here in the methods of the natural sciences as we see them at work in physics, chemistry, and biology, and as we applied them in the field of behavior. How far will they carry us in the study of groups?³¹

So far, there is a show of openness about whether there is a possibility of "accounting for the behavior of people in groups without using any new term or presupposing any new process or principle,"³² but subsequent analysis (extrapolation) suggests that nothing stands in the way of such reduction—particularly since it is possible to define a "social law" as "generated by the behavior of individuals" and to find the origin of social behavior in the fact that "one organism is important to another *as part of its environment*."³³ Ensuing discussion reduces group processes to the same terminology used in the analysis of individual behavior which, in turn, is an extension of

operational definitions used in laboratory experiments with animals. For one committed to precise operational definition of the terms *stimulus* and *response*, Skinner is remarkably loose in applying those terms without any empirical referents; there is little convincing proof that analogies and extrapolations on the social plane are functionally equivalent to laboratory specifications. As Deutsch and Krauss conclude (with respect to Skinner's *Verbal Behavior* exercise):

It is . . . an extrapolation without any explicit rules for extrapolation—without any way of knowing whether the terms one has employed in his description of his laboratory experiments are being appropriately applied in the description of human behavior in a complex social situation. . . . There is, of course, nothing wrong with the use of analogies; it is often a fruitful way to orient oneself to a new area of investigation. Analogical statements are not, however, statements of obtained relationships, but *only speculations about what might be true if the analogies were valid*.³⁴ [Emphasis added.]

Neither Deutsch and Krauss nor I would argue that speculative extrapolation is intrinsically invalid; rather, that in Skinner's system it lacks sufficient terminological or empirical foundation to pass as adequate social theorizing. For example, Eugene Meehan has correctly noted that little research in the behaviorist tradition has dealt with human beings *in situ*, where the true complexity of the subject matter would emerge.³⁵ While that observation is consistent with the argument of this paper, it should not be forgotten that much research has been conducted under the aegis of "behavior therapy" or in the tradition of laboratory experimentation.³⁶ The rather more academic tradition of experimentation has produced a diverse body of findings, many of which are not Skinnerian in origin or impact and cannot, therefore, be taken as direct evidence of the adequacy of Skinner's faith in the approach. Although a full review of that literature is beyond the scope of this analysis, it can be noted that the

such cognitive or emotional states a trace of remission of his behaviorist program, should be chastened by Skinner's assertion, at the end of his book *Verbal Behavior*, that "so far as a science of behavior is concerned, Man Thinking is simply Man Behaving" or, to eliminate misunderstanding about why he devoted an entire book to verbal behavior, he says, "There is nothing exclusively or essentially verbal in the material analyzed in this book. It is all part of a field—of the behavior of the most complex creature in contact with a world of endless variety. For practical purposes a special field has been set apart in terms of characteristics imparted to it by special controlling variables." Skinner, *Verbal Behavior*, p. 452. [Note that the justification is *practical*, not theoretical or conceptual.]

³¹ Skinner, *Science and Human Behavior*, p. 297.

³² *Ibid.*, p. 298.

³³ *Ibid.*, p. 298.

³⁴ Morton Deutsch and Robert M. Krauss, *Theories in Social Psychology* (New York: Basic Books, 1965), p. 103.

³⁵ Eugene J. Meehan, *Contemporary Political Thought: A Critical Study* (Homewood, Ill.: Dorsey, 1967), p. 199.

³⁶ See H. R. Beech, *Changing Man's Behavior* (Baltimore: Penguin Books, 1969), chapters 13 and 14; Halmuth H. Schaefer and Patrick L. Martin, *Behavioral Therapy* (New York: McGraw-Hill, 1969); Walter Mischel, *Personality and Assessment* (New York: Wiley, 1968), pp. 161–168; Roger Ulrich, Thomas Stachnik, and John Mabry, *Control of Human Behavior* (Glenview, Ill.: Scott Foresman, 1970); Elliot McGinnies and C. B. Ferster, *The Reinforcement of Human Behavior* (Boston: Houghton Mifflin, 1971); Robert B. Zajonc, *Social Psychology: An Experimental Approach* (Belmont, Calif.: Wadsworth, 1966).

evidence is mixed and inconclusive with respect to Skinnerian projections.

On the side of behavior therapy, Skinnerian techniques are only a few of those actually employed. "Brainwashing," drug therapy, the pairing of emetics with responses to be extinguished (as in the "Ludovico" technique in *A Clockwork Orange*),³⁷ or numerous treatments employed by therapists to alter sexual habits are foreign to his program and should not be unfairly appended to Skinner simply for sake of argumentation. Where successes relevant to his theory are reported, they refer primarily to institutionalized settings such as prisons, mental hospitals, schools for the retarded, and similar situations where the experimenter has the advantage of a predefined manipulative situation. A "token economy" reinforcement program in, say, a reformatory can show success through provision of incentive to learning, compliance, and the like, but it cannot be interpreted as validation of operant conditioning in social settings where manipulative control of the subjects is available *prior* to the experiment. In most cases, the availability of that prior control is a precondition for experimentation. This is a critical issue in the matter of cultural extrapolation, and the final issue to be considered.

Social and Cultural Control

It has already been seen that Skinner's approach to social processes is an extension of his manipulative experimental program. His perspective is dedicated to "methodological individualism," in the sense that it does not ascribe attributes to groups that are not based on and reducible to individual behavior. Institutional settings for operant research ordinarily rely on experimenter-subject control, or on group-subject control, where the group processes are in turn largely influenced by the experimenter (or therapist). Validation of this sort raises serious questions about the efficacy of behavior modification techniques as a basis for social theory suggesting that the possibility of behavior modification in social settings presupposes administrative and technical control by the experimenter. The question of "who controls the controllers," commonly raised in humanist critiques of Skinner, now re-emerges in this analysis of his adequacy as a source of an empirical theory of social control. The argument to be made here is that control is possible and, perhaps, even likely. Such control does not have within it the potential for benign scientific guidance or for self-correcting humaneness, both of which Skinner transfers from the laboratory to justify his proposal for "cultural" engineering. Before elaborating this thesis, it seems useful to

discuss briefly the humane intent that appears to motivate Skinner's approach to the engineering of society

There seems to be little reason to doubt Skinner's integrity or humane purpose when he argues, in the voice of Burris (in *Walden Two*), that his sense of social responsibility seems to have no influence on the world and that he wants more effective means for improving human conditions.³⁸ Skinner also is frustrated with man's attempts to improve the world. As he says,

Man's power appears to have increased out of all proportion to his wisdom. He has never been in a better position to build a healthy, happy, and productive world; yet things have perhaps never seemed so black.³⁹

But even if this humane impulse is recognized, Skinner's antipolitical bias should give political theorists some pause. As one enthusiastic character in *Walden Two* says,

We want to find out what people really want, what they need in order to be happy, and how they can get it without stealing it from somebody else. You can't do that in politics. . . . The politicians guess at all the answers and spend their time persuading people they're right—but they must know they're only guessing, that they haven't *proved* anything.⁴⁰

The formulation of the problem, whether in his early utopian novel, or in his later book, *Beyond Freedom and Dignity*, seems much the same. The world's problems cannot be solved by simple application of scientific technology, by instilling social consciousness in scientists, or by the continued application of "folk wisdom and practical rules of thumb." Rather, "we need to make vast changes in human behavior."⁴¹ And the tools (i.e., technology of behavior modification) are already available to be applied in lieu of "political solutions":

Political action was of no use in building a better world, and men of good will had better turn to other measures as soon as possible. Any group of people could secure economic self-sufficiency with the help of modern technology, and the psychological problems of group living could be solved with available principles of "behavioral engineering."⁴²

The significant change from the early formulation is in the possible agency for manipulating the necessary changes in human behavior. The anti-

³⁸ B. F. Skinner, *Walden Two* (New York: Macmillan, 1962), p. 8. Originally published by Macmillan in 1948. All citations are from the 1962 paperback edition.

³⁹ Skinner, *Science and Human Behavior*, p. 4.

⁴⁰ Skinner, *Walden Two*, p. 8.

⁴¹ Skinner, *Beyond Freedom and Dignity*, pp. 4–5.

⁴² Skinner, *Walden Two*, p. 14.

³⁷ Anthony Burgess, *A Clockwork Orange* (London: Heinemann, 1962).

political bias in the utopian novel took the form of a rejection of national politics and the establishment of an experimental community—a community devoid of “politics” in the generic sense and committed to rational administrative engineering of culture. The later work, *Beyond Freedom and Dignity*, seems no less explicitly antipolitical, but appears to be directed at a public who Skinner hopes might support or facilitate advances in behavioral engineering. Although Skinner seems no more enamored of the nation-state than in the earlier work, the hortatory goal seems to be a wider acceptance of behavioral technology.⁴³

Skinner's antipolitical bias is even more throughgoing than would be indicated by his animosity toward national politics. In discussing group behavior, he persistently reduces the analytic situation to the individual entity, with the group serving as part of the controlling environment. He understands the action of reciprocal control to be the manner in which the individual responds to alter the (social) environment; that is, when the individual influences the group (brings it under control of himself as stimulus?). But Skinner does not seem to recognize the essentially political nature of group decision making, interaction, sharing of meanings and norms, and mutual seeking for commonly acceptable goals. This range of activity is ignored because its study would involve considerable methodological problems.

Where a more humble approach would lead the author to specify the major problems posed by the subject matter for his approach, Skinner simply consigns group studies to the future. His interest is not in the political/interactive process; it is in the task orientation and efficient operation of goal-oriented groups. He says, through Frazier, the primary engineer and interpreter of the utopian community of *Walden Two*:

We know almost nothing about the special capacities of the *group*. We all recognize that there are problems which can't be solved by an individual . . .

The problem of efficient group structure alone is enough to absorb anyone's interest. An organization of a committee of scientists or a panel of script writers is far from what it could be. But we lack control in the

world at large to investigate more efficient structures.⁴⁴

As a good utopian Skinner should recognize that he has sown the seeds of his utopia's own destruction. By not allowing for some sort of meaningful action and by assuming that each individual confronts the environment (even the social environment) alone, he ignores counter-ideologies and potentially hostile or disruptive forces that might demand to influence goal setting or challenge the organization of the community. Skinner in constructing *Walden Two*, has recognized that, in the words of Berger and Luckmann,

Maximal success in socialization is likely to occur in societies with very simple division of labor and minimal distribution of knowledge.⁴⁵

It is difficult to excuse him, however, for ignoring this critical dimension in *Beyond Freedom and Dignity*, his explicit call to the world to engage in cultural engineering in accordance with his methodological program.

For the society of *Walden Two*, and even more so for an entire culture managed by his principles, one cannot reason away the insight of Berger and Luckmann as “irrelevant”:

Incipient counter-definitions of reality and identity are present as soon as any such individuals congregate in socially durable groups. This triggers a process of change that will introduce a more complex distribution of knowledge. A counter-reality may now begin to be objectivated in the marginal group of the unsuccessfully socialized.⁴⁶

It is hard to imagine that the emergence of a counterdefinition of the social world might be easily eliminated with Skinner's program. Even the specter of total administration which is often attributed to him would not reliably guard against such fissures in the socializing (“behavior modifying”) practices of the culture. Skinner's failure to deal seriously with this question renders suspect his understanding of human interactive processes. If he understands them he should deal with them; if they are “irrelevant” to his methodological imperative, he should not reify that imperative to a cultural design. In either case his is not to be accepted as a valid model of empirical theory until such vital processes can be adequately handled.

It is suggested here that serious methodological, empirical, and inferential problems currently block the way to implementing (or even seriously planning) a program of cultural engineering. The possibility exists, however, for integrating of be-

⁴³ Skinner, *Walden Two*, p. 293.

⁴⁵ Peter Berger and Thomas Luckmann, *The Social Construction of Reality* (Garden City, N.Y.: Doubleday, 1966), p. 196.

⁴⁶ Berger and Luckmann, p. 166.

⁴⁴ One critic, Bennett Berger, takes this shift of emphasis to be a commitment to the nation-state and institutionalized power, particularly since there seems to be no other agency with the potential for implementing such a momentous cultural effort. Berger argues that Skinner “wishes to persuade” men in high places to initiate effective programs of behavioral control. See that author's “Review of *Beyond Freedom and Dignity*,” *American Journal of Sociology*, 78 (November, 1972), p. 706. Since Skinner remains elusive about precisely who should do what to whom in order to carry out his plan, Berger's criticism remains problematic, however.

havior theory into other social theories⁴⁷ (and it is to be expected that Skinnerian contributions to psychology will eventually be incorporated in more than heuristic ways into solid empirical theory). Assuming that such a task is yet to be accomplished, it is more relevant for this discussion to return to the possible impact of the application of Skinner's proposals for cultural engineering given his assumptions, methodology, and extrapolations as outlined above.

Cultural Engineering and Technological Control

Skinner has said that his technology can create a world qualitatively different from the one now existing. Although the designer of *Walden Two* admitted to his interlocutor that he was not a product of that community and therefore had unresolved tendencies that kept him from being thoroughly integrated into its normative culture, Skinner has faith that such problems can be rationalized in the future. The precise nature of the social change cannot now be apparent, but he predicts that generations socialized into that kind of world—repugnant as it might be to many now—will be conditioned to live, work, and be happy within it. Most recently Skinner has reiterated that hope in *Beyond Freedom and Dignity*:

The problem is to design a world which will be liked not by people as they now are but by those who live in it. . . . A world that would be liked by contemporary people would perpetuate the status quo. It would be

"One means whereby Skinnerian principles might be integrated into empirical social theory is suggested in the affinity between Skinner's notion of behavior selection and broader theories of functionalism. Some authors have noted this potential linkage (Arthur L. Stinchcombe, *Constructing Social Theories* [New York: Harcourt, Brace and World, 1968], pp. 85–87; Gerald Marwell "Review of *Beyond Freedom and Dignity*," *Contemporary Sociology*, 1 [January, 1972], 18–29), but that possibility seems largely unexplored at the moment.

It is possible that cultural selection of behavior (through a process of operant conditioning) might allow a melding of the behavior modification approach with current theoretical concerns. If the central argument of this paper is correct, the imperialistic claims of the Skinnerian program are to be denied but the insights retained wherever they can be demonstrated to have empirical import at the social level.

Some heuristic uses of Skinnerian and other learning approaches have recently appeared in the literature (see Clifford Anderson and Betty Nesvold, "A Skinnerian Analysis of Conflict Behavior," *American Behavioral Scientist*, 15 [July/August, 1972] 883–909; Richard M. Merelman, "Learning and Legitimacy," *American Political Science Review*, 60 [September, 1966], 548–561; Thomas J. Cook and Frank P. Scioli, Jr., "A Critique of the Learning Conception in Political Socialization Research," *Social Science Quarterly*, 52 [March, 1972], 949–962), but more empirical and theoretical specification will be needed before the approach is fully exploited.

liked because people have been taught to like it A better world will be liked by those who live in it because it has been designed with an eye to what is, or can be, most reinforcing.⁴⁸

In brief, the society to be constructed is not to be provisioned according to mutually agreed-upon goals, but it is to emerge from the progressive experimentation with the culture and scientific uncovering of what people find to be most reinforcing. The role of goals is minimal, if not entirely absent. The implication is that science, left to its own logic, will uncover the proper mode of human cultural functioning and will lead to its optimum design. This logic is Skinner's main defense against offensive practices by a potentially averse elite, even though he has admitted that

. . . a science of behavior is just as dangerous as the atom bomb. It has the potential of being horribly misused. We must devote ourselves to a better governmental design which will have some control over all destructive instruments. (Emphasis added.)⁴⁹

It appears after all that the self-correcting characteristics of science may not be sufficient to maintain the integrity of the human controllees. The problem is not that scientific design is faulty, but that it might be abused or misapplied by venal controllers. Thus, there is a dilemma in Skinner's attitude toward controlling practices that surfaces in the course of his extrapolation to cultural control: the procedures of science are alleged to be self-limiting, but he acknowledges the technology may be misapplied. The problems he relates are real enough, but his system does not have within it a vital element that could clarify (if not resolve) the problem; namely, a structural theory that takes into account organized patterns of interaction and domination in society. For all his interest in transcending "politics," the very attempt to engage in social prescription seems to require a more "political" theory. A brief look at some of his writings on government and law will illustrate the problems inherent in his approach.

In *Science and Human Behavior*, Skinner took some pains to reinterpret the concept of "law" into behavioral terms, stating that "a law is . . . a statement of a contingency of reinforcement maintained by a governmental agency."⁵⁰ As such, a law specifies behavior and consequences to follow that behavior (usually punishments for transgression). The governmental agency is the controller and establishes the contingencies. Skinner might argue that the manner in which laws are originally generated and enforced is more consistent with experimental design (and science) if there is adequate feedback from the controllees, particularly

⁴⁸ Skinner, *Beyond Freedom and Dignity*, p. 164.

⁴⁹ Evans, p. 54.

⁵⁰ Skinner, *Science and Human Behavior*, p. 339.

if the process is "democratic."⁵¹ But he is not clear about how the concept democratic applies in such a case unless one believes that people govern themselves through such agencies and that authorities have no distinct goal of their own that might influence controlling practices. Since that assumption seems untenable, it seems necessary to give consideration to governmental structure and particularly to representational practices; otherwise, there is no way to analyze the establishment and enforcement of the contingencies.

The Skinnerian program does not have within it the concepts for dealing with such structural and processual considerations. Establishing the contingencies that affect the shaping and sharing of values within the political community should be seen as the outcome of the political process, but Skinner cannot deal with that process using his approach as currently stated. In his laboratory, and in the institutionalized applications of his methods, the controllees generally do not interact in group processes of mutual value-setting, nor do they communicate the outcome of that process to the controller. The paradigm was not developed to deal with that variety of social interaction. If it could be elaborated in that direction without vitiating the Skinnerian program, the transition to human cultural control might appear much more plausibly supported on the theoretical level.

Aware of some of the dangers of the government as controller, Skinner suggests some corrective tendencies, noting that "*in the long run* the power of a government which has the consent of the governed derives from a congruence of function between governmental and ethical control" (emphasis added).⁵² The reciprocity of control between experimenter and subject and, analogously, between governmental agency and citizen, is a crucial element in achieving that congruence. Skinner recognizes, though, that the balance is ordinarily on the side of the controller and that the asymmetry will tend to favor the controller increasingly as time progresses. In fact,

... the power of the agency increases with each interchange ... the growth of power accelerates as control becomes more and more effective. When the strong man coerces others to engage in control in his interest, his total power is increased. When a government uses force to acquire wealth, it can then also exercise economic control.⁵³

There may be a limit in the "simple exhaustion of the resources of the governed,"⁵⁴ but surely there must be some countercontrol short of the population's being bled dry. There is, says

Skinner: in *laws* that specify and limit behavior for both controller and controllee, and in *constitutions* which establish limits on the exercise of power. "With these specifications the system is prevented from deteriorating through an asymmetrical interchange."⁵⁵ We might question whether that deterioration really could be avoided as the techniques for control became increasingly effective; however the danger of deterioration is particularly great if we accept Skinner's persistent belief that the governmental system should emulate the laboratory situation endemic in the behavior control approach. The control problem remains, and Skinner cannot resolve it within his own system: his own laboratory procedures may be self-limiting, but the ambitions of governmental agencies (the social analogue of the experimenter) are not. Structural controls like laws and constitutions may be partial possible solutions, but we may well require different laws and structural arrangements than we now have. It seems likely that innovative laws and practices would have to be designed to contain the urge toward asymmetry, and social theorists wishing to apply Skinner's insights would do well to consider the structural arrangements that would be needed.

Even if the problem of governmentally patterned power were to be overcome, there would still remain an additional problem not easily solved in Skinner's reductionist approach, which lacks the concepts to deal with the *social* patterning of dominance and power. Individuals do not appear in the culture as atomized, isolated experimental subjects, but already have personal histories anchoring them in class, status, occupational, familial, and political systems. Since behavioral control might simply be co-opted by existing "controllers" for their own purposes, it should not be forgotten that, in the social world the controllers may be inclined to condition that behavior that is reinforcing to themselves rather than the controllees. Skinner himself hints at this possibility when he describes the conditioning of "obedience" as a guard against unforeseen future problems:

By establishing obedient behavior, the controlling agency prepares for future occasions which it cannot otherwise foresee and for which an explicit repertoire cannot, therefore, be prepared in advance. When novel occasions arise to which the individual possesses no response, he simply does as he is told.⁵⁶

Whatever obvious benefits such coordinated behavior under governmental command might reap for the agency, the conditioning of obedience might be used for nonbenign purposes. It would be too much to expect that agency controllers

⁵¹ Skinner, *Beyond Freedom and Dignity*, p. 172.

⁵² Skinner, *Science and Human Behavior*, p. 336.

⁵³ *Ibid.*, p. 347.

⁵⁴ *Ibid.*

⁵⁵ *Ibid.*

⁵⁶ *Ibid.*, p. 338.

would let themselves lose their positions, reputations, fortunes, and political futures over blunders and venality if they had a reservoir of conditioned obedience upon which to draw. Control in the governmental context is potentially dangerous as countercontrol fails, asymmetry accelerates, and the controllers choose what is reinforcing to *them* rather than to their public.

All of this raises one final problem; namely, whether it might be possible to perpetuate a pattern of control that had aversive consequences for the controllees. According to laboratory experiments and casual observation, aversive contingencies tend to produce avoidance or attack behavior—in this case, examples might be defection, exile, subversion, revolution, political opposition. A major difficulty in the political situation is that the controllers might arrange positive reinforcement for behavior that had long-run aversive consequences. The problem can, however, be *stated* (though, I believe not resolved) in Skinner's own terms. We find acknowledgement of the difficulty in the following account of the long-term and short-term consequences of controlling practices:

A problem arises for the defender of freedom when the behavior generated by positive reinforcement has deferred aversive consequences. This is particularly likely to be the case when the process is used in intentional control, where the gain to the controller usually means a loss to the controllee. What are called conditioned positive reinforcers can often be used with deferred aversive results.⁵⁷

The controllers in this statement are assumed to be traditional, "prescientific" agencies lacking in a technology of behavior modification. They may use positive reinforcement in the sense of immediate gratification for their subjects, but the long-term consequences may be aversive. The exploitation of natural resources for short-run affluence may produce long-run deterioration of the resource base; bread and circuses may provide immediate pleasure, hiding the self-aggrandizement of governmental authorities; short-run benevolent paternalism might promote long-run dependency and increasing asymmetry of control. The examples might be multiplied, but the basic point is that social decisions about immediate versus long-term consequences have to be made and the controllers have the primary responsibility to make such decisions.

The problem is basic to the whole system be-

cause if people are not brought under control of the long-term consequences of their behavior, then short-term positive reinforcements may interfere with the survival of the culture. To achieve such control, governmental practices ideally must set short-term contingencies that are consistent with long-run consequences. Thus, "the task of the cultural designer is to accelerate the development of practices which bring the remote consequences of behavior into play."⁵⁸ Might not an inadequately countercontrolled agency opt for short-term reinforcements for *themselves* (or even some public-oriented, but wrong program) while in fact preparing the way for long term aversive consequences? The control can work both ways—it can be used to avoid remote aversive consequences or to promote them.

As Skinner rightly notes, "some balancing of control and countercontrol may be a first step in the design of an effective culture,"⁵⁹ but it seems clear that his experimental model is not designed to handle such a problem. I do not believe his approach is "naïve" (as Erich Fromm claims),⁶⁰ but that he has overworked his tools and failed to indicate where additional ones might be needed. If that was not his task, then it must be done by others. The problems of methodological reductionism, the implied ontological shift, the lack of a structural theory, and even an apparent inattention to contradictions within his own extrapolations reduce the plausibility of Skinner's claims for behavior control and cultural engineering. Once his claims have been placed in this light, it becomes clear that the science/technology of behavior control needs to be embedded in some broader theoretical framework that supplies the social and political theory lacking thus far. This will require further analysis to determine the proper areas of applicability of Skinner's approach as well as the place of other techniques for the control of human behavior. At that level, increasing attention to psychological models would become integral to political formulations, and reanalysis of the psychological assumptions about the nature of the human being become increasingly important for the development of political theory. Additionally, new political arrangements (legal, constitutional, processual) may be necessary to adequately insure humane use of behavior-control technology. In this sense, the older term "policy science" takes on renewed importance

⁵⁸ Skinner, *Beyond Freedom and Dignity*, p. 143.

⁵⁹ B. F. Skinner, "Answers for My Critics," in Harvey Wheeler, ed., *Beyond the Punitive Society* (San Francisco: Freeman, 1973), p. 265.

⁶⁰ See Erich Fromm, *The Anatomy of Human Destructiveness* (New York: Holt, Rinehart and Winston, 1973), p. 40. Chapter 2 of that book (pp. 33–68) contains a critique of Skinner and others. Fromm considers to be behaviorists or environmentalists.

⁵⁷ *Beyond Freedom and Dignity*, p. 33. For a more elaborate working out of the problem in the terms of Skinner's concepts, see G. B. Ferster, "Arbitrary and Natural Reinforcement," *Psychological Record*, 17 (1967), 341–357. Reprinted in McGinnies and Ferster, *The Reinforcement of Social Behavior*, pp. 433–436.

since, in a very real way, feedback, evaluation, planning, and control procedures may in the future be increasingly structured on principles of behavior modification. Thus, while many of Skinner's claims may have empirical support from the laboratory and selected institutionalized settings, many speculations lack the research and conceptual analysis to qualify yet as valid extrapolations. Still other claims are immersed in paradox, inadequately integrated in Skinner's own

presentation, and plagued with anti-humane potentialities for the abuse of the power to control. The challenges put to social scientists by Skinner's social speculations therefore seem to be (1) theoretical integration of that which is valid into empirical theories of political order, (2) further analysis of that which *may* be valid, and (3) consideration of structural and processual arrangements that will insure the appropriate use of that which is effective.